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# Developing Effective Wording and Format Options for a Children's Nutrition Behavior Questionnaire for Mothers of Children in Kindergarten

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## Abstract

This study focuses on a set of eating habit questions proposed for inclusion in the U.S. Department of Education's Early Childhood Longitudinal Survey, Birth Cohort. The study assesses the wording and format of a series of questions for mothers of children in kindergarten and/or first grade regarding the child's food consumption habits. Most mothers were able to answer questions on their child's eating habits by using a variety of recall strategies or by using references. Most mothers used recall strategies, such as the recall of preferences and special events or a child's specific likes or dislikes. They also used references, such as the presence of a menu or snacking policies at school. Mothers did not generally struggle with terminology, but some words and concepts required clarification. The biggest problem in answering the questions was the combination of not remembering what foods were eaten and the desire to reflect socially acceptable and beneficial eating behaviors.



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### Appendix A: Wave 1 Data Collection Guides

- A. Cognitive Interview Guide
- B. Focus Group Moderator's Guide

### Appendix B: Wave 2 Data Collection Guides

- A. Cognitive Interview Guide
- B. Focus Group Moderator's Guide

## Executive Summary

This research study focuses on a set of proposed eating habit questions for inclusion in the U.S. Department of Education's Early Childhood Longitudinal Survey, Birth Cohort (ECLS-B).

The Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA) is interested in obtaining a better understanding of the design considerations, with respect to interview wording and format, for a series of questions to be asked of mothers of children in kindergarten and/or first grade (Grades K-1), regarding their child's food consumption habits. These questions are planned for potential incorporation into the Grades K-1 waves of data collection for the U.S. Department of Education's Early Childhood Longitudinal Survey, Birth Cohort (ECLS-B).

The overall objectives of this study were to determine what time period works best for parents (mothers) in responding to a series of questions on food consumption habits of their kindergarteners and/or first grade children, and to determine how parents understand the questions and identify any areas of difficulty or confusion in them or the response options.

To answer these objectives, the following research questions were developed:

- a. Do the respondents interpret the questions, as asked, in the manner intended by ERS? If not, are there changes in wording that will improve understanding?
- b. What time period do respondents feel more comfortable with, in responding to the questions—for example, the past 24 hours or the past week?
- c. Are the response options suggested by ERS appropriate? Are respondents able to use these response options to describe their children's behavior? If not, are there changes in response options that would be more appropriate?

A special concern for this research is not only determining what changes may need to be made to improve the usability of the questions for mothers as proxies, but also considerations of comparability between the proposed set for mothers of K/grade 1 children and the existing questions used with fifth graders.

To address the research questions, this study included two waves of data collection with mothers of kindergarten and /or first grade children, with a total of 36 respondents. Each wave of the study included a set of cognitive interviews with nine respondents and one focus group with nine participants. This approach allowed for the development of iterative findings as alternative questions and response options were analyzed. The first wave of the study served as an exploratory wave, broadly investigating how mothers of kindergarten and 1<sup>st</sup> grade students interpreted and responded to the questions. The second wave served as a more in-depth testing ground for alternatives emerging from the Wave 1 findings. On the basis of the findings of Wave 1, a revised set of questions was developed for testing in Wave 2 of the study. The revised questions incorporated changes that dramatically impact mother's ability to answer the questions and response options as related to the initial findings. In Wave 2, this revised set of questions was tested. The recommendations for the eating habits questions were then developed from the review of the Wave 2 findings, along with relevant comparisons to the Wave 1 outcomes.

### Conclusions and Recommendations

Overall, most mothers were able to answer the questions on their child's eating habits by reporting to a variety of recall strategies, such as the recall of preferences and special events, the recall of a child's specific eating habits (likes or dislikes), or using references such as the presence of a menu, snacking policies at school or with afterschool sports, and rules established for eating away from home. Mothers did not generally struggle with terminology used in the questions, but there were some words and concepts that require clarification to improve mothers' ability to answer the questions more easily. First, clarification for the term "regular milk" should be added. Additionally, as mothers in both waves of the study commented, the questions are very clear about what to include, but not clear about what to include in the responses, particularly for questions on other vegetables, and potatoes that were not fried.

There were some specific areas of underestimation that were related to how mothers interpreted the question. The data collection revealed that mothers are not always considering all of the fruits and vegetables that their child may have consumed when answering the respective questions on carrots, potatoes, and other vegetables. Mothers most often struggled with coming up with a frequency for fruit or vegetable consumption for their child. Part of this was due to the fact that the item was consumed often by children, but not necessarily completely eaten at one sitting.

Perhaps most problematic for the mothers participating in this study were problems encountered due to the combination between limits on the ability to recall what foods were consumed and the desire to reflect socially acceptable and beneficial eating behaviors for young children. Mothers struggled with addressing the fluctuation from day to day in the kinds of foods their child may have consumed, particularly for items consumed regularly, such as milk, fruits and vegetables and 100% fruit juice. This impacted their preference for supplying an answer for only the past twenty-four hours, as well as their ability to develop a response for the past seven days. A key emerging theme was the existence of a tension between the desire to be accurate in their responses and the inability to remember every opportunity for consumption of the particular food item. The accompanying conversations with mothers provide some limited indication that this was in part due to the desire to "talk a good diet," as some mothers provided commentary on the health benefits of particular choices. Mothers repeatedly wanted to provide the most accurate answer in their responses, particularly in regards to questions about healthy foods choices, like vegetables and fruits. In response to the need to select one choice in answering a question, many mothers commented that they wished the questions were clearer about whether an average response was a correct answer, particularly if they wanted to use the daily response options.

The findings also illustrate the need for additional reminders to help mothers recall all other opportunities where their child may have consumed a food. The cognitive interviewing and focus groups revealed some areas when mothers grossly underestimated the number of times their child consumed a food item. The most common reason for underestimation stemmed from the fact that mothers often forgot to include times such as school, play dates, or sporting activities in their responses. Cognitive probing revealed that many mothers just didn't think of these times automatically. Mothers needed the reminder to include eating that occurred outside of the presence no matter how scheduled their patterns of feeding the child might have been. Additionally, language or instruction prior to the eating habit questions needs to be added to the

questionnaire to help mothers focus on the food their child actually consumed, and not what they offered or prepared.

Most mothers were able to recall what their child consumed over the past twenty-four hours more easily than over the past seven days. However, while mothers admitted that this would be much easier, there was some hesitancy on the part of mothers for answering in this manner. Barriers to answering for just the past twenty-four hours included the tensions mothers experienced in wanting to provide the response that best described what their child ate, combined with the concern that answering for a day did not reflect the best of their child's eating habits, particularly if the day in question did not follow the "normal" schedule. The findings suggest that the best way for mothers to answer the questions would be either to provide clear instructions asking for an average for the week, or to ask specifically about fewer days—a one to three-day period was suggested by mothers in this study. Overall, the findings suggest that it is easier for mothers to tally foods on a daily basis than recalling what was consumed over the whole week. This tallying method could be applied to either answering for the past twenty-four hours, or providing a response for the past seven days. However, based on the data provided by mothers in this study, using only the past twenty-four hours would limit the answers mothers give to questions on green salad, fast food, French fries and fried potatoes, other vegetables, consumption of soda pop and drinks that were not 100% fruit juice, and to a lesser extent, candy, ice cream, cookies and similar items, as well as potato chips, pretzels, Fritos, and other salty snack foods.

Next, the specific recommendations developed for each eating habit question are presented. The tables present the original eating habit question, followed by the revised question, and the rationale for making changes. When no changes outside of the adding the statement "including school activities, play dates, sports, and the weekend" to the question as described above are suggested, the question is not included below.

**Q1:** During the past 7 days, how many glasses of milk did your child drink? Include all types of milk, including cow's milk, soy milk or any other kind of milk; include the milk your child drank in a glass or cup, from a carton, or with cereal. Count the half pint of milk served at school as equal to one glass.

- |    |   |
|----|---|
| 1  | <i>Child did not drink milk during the past 7 days.</i> |
| 2  | <i>1 to 3 glasses during the past 7 days.</i>           |
| 3  | <i>4 to 6 glasses during the past 7 days.</i>           |
| 4  | <i>1 glass per day.</i>                                 |
| 5  | <i>2 glasses per day.</i>                               |
| 6  | <i>3 glasses per day.</i>                               |
| 7  | <i>4 or more glasses per day.</i>                       |
| DK | <i>DON'T KNOW</i>                                       |
| RF | <i>REFUSED</i>  |

**Revised Q1:** During the past 7 days, including school activities, play dates, sports, and the weekend, how many glasses of milk did your child drink? Include all types of milk, including cow’s milk, soy milk or any other kind of milk; include the milk your child drank in a glass or cup, from a carton, or with cereal. Count the half pint of milk served at school as equal to one glass.

- 1 *Child did not drink milk during the past 7 days*
- 2 *1 to 3 times during the past 7 days*
- 3 *4 to 6 times during the past 7 days*
- 4 *1 time per day*
- 5 *2 times per day*
- 6 *3 times per day*
- 7 *4 or more times per day*
- DK *DON’T KNOW*
- RF *REFUSED*

**Rationale:** Adding the statement referencing other times where a child may have consumed the food provided more complete responses by mothers in Wave 2 of the study, although it may have also complicated the tallying process for some mothers using the times per day response options. However, the inclusion of the statement did prompt mothers to consider a wider range of times when their child may have consumed a food item in the question set than the original question did. Changing “glasses” to “times” makes all of the response options consistent and removes the possibility that mothers become frustrated by calculations that convert glasses to servings and then to “times.”

**Q2.** What kind of milk did your child usually (most often) drink during the past 7 days?

- 1 *Whole milk*
- 2 *2% milk.*
- 3 *Skim milk.*
- 4 *Low fat or 1% milk.*
- 5 *Soy milk.*
- 6 *Both regular milk and soy milk.*
- 7 *Some other kind of milk.*
- DK *DON’T KNOW*
- RF *REFUSED*

**Revised Q2.** What kind of milk did your child usually (most often) drink during the past 7 days?

- 1 *Whole milk*
- 2 *2% milk.*
- 3 *Skim milk.*
- 4 *Low fat or 1% milk.*
- 5 *Soy milk.*
- 6 *Both **regular cow’s milk** and soy milk.*
- 7 *Some other kind of milk.*
- DK *DON’T KNOW*
- RF *REFUSED*

**Rationale:** The wording of “regular cow’s milk” improved mothers understanding of the question by making the response option clearer. Add a response option to account for mothers whose child did not consume any milk. The question set as tested did not include a skip pattern for mothers who provided the response “my child did not consume milk in the past seven days” in question 1. Either a skip pattern should be added, referring these respondents directly to

question 3, or a response option of “none of the above, child didn’t drink milk” needs to be added to question 2.

**Q5.** During the past 7 days, how many times did your child eat fresh fruit such as apples, bananas, oranges, berries, or other fruit such as applesauce, canned peaches, canned fruit cocktail, or frozen berries? (Do not count fruit juice.)

1 *Child did not eat fruit during the past 7 days.*

2 *1 to 3 times during the past 7 days.*

3 *4 to 6 times during the past 7 days.*

4 *1 time per day.*

5 *2 times per day.*

6 *3 times per day.*

7 *4 or more times per day.*

DK *DON'T KNOW*

RF *REFUSED*

**Revised Q5.** During the past 7 days, including school activities, play dates, sports, and the weekend, how many times did your child eat fresh fruit such as apples, bananas, oranges, berries, or other fruit such as applesauce, canned peaches, canned fruit cocktail, frozen berries or dried fruit? (Do not count fruit juice.)

1 *Child did not eat fruit during the past 7 days.*

2 *1 to 3 times during the past 7 days.*

3 *4 to 6 times during the past 7 days.*

4 *1 time per day.*

5 *2 times per day.*

6 *3 times per day.*

7 *4 or more times per day.*

DK *DON'T KNOW*

RF *REFUSED*

**Rationale:** Adding the words dried fruit made the list of fruit choices complete for mothers and provided them with an opportunity to include all fruit in their response. Clearer guidance on self-service snacking and how to count it should be developed. This was one of the most challenging questions for mothers to ask due to the popularity of fruit and the variability with which it was consumed by children in this age category. In order to address the frustration mothers experienced when tallying the fruit for the times per day option and to address underestimates, guidance on the accuracy desired for the response would be helpful. Specifically, mothers need some direction on how to calculate a “time” for self-service snacking.

**Q7.** During the past 7 days, how many times did your child eat potatoes? (DO NOT count French Fries, fried potatoes, or potato chips).

1 *Child did not eat potatoes during the past 7 days.*

2 *1 to 3 times during the past 7 days.*

3 *4 to 6 times during the past 7 days.*

4 *1 time per day.*

5 *2 times per day.*

6 *3 times per day.*

7 *4 or more times per day.*

DK *DON'T KNOW*

RF *REFUSED*

**Revised Q7.** During the past 7 days, including school activities, play dates, sports, and the weekend, how many times did your child eat potatoes? (DO NOT count French Fries, fried potatoes, potato chips, tater tots, or sweet potatoes).

- 1 *Child did not eat potatoes during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*

DK *DON'T KNOW*

RF *REFUSED*

**Rationale:** In addition to the prompting statement described above, adding the wording tater tots and sweet potatoes assisted mothers in knowing what kinds of potatoes to exclude from their response to this question.

**Q9.** During the past 7 days, how many times did your child eat other vegetables? (DO NOT count green salad, potatoes, French fries, or carrots.)

- 1 *Child did not eat other vegetables during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*

DK *DON'T KNOW*

RF *REFUSED*

**Revised Q9.** During the past 7 days, including school activities, play dates, sports, and the weekend, how many times did your child eat other vegetables? (DO NOT count green salad, potatoes, French fries, or carrots.)

- 1 *Child did not eat other vegetables during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*

DK *DON'T KNOW*

RF *REFUSED*

**Rationale:** In addition to the prompting statement described above, better wording or clearer instruction should be provided for Q9 to help mothers know how to classify vegetables served in mixes, or as the main component of a main dish need to be added based on the findings of both Wave 1 and Wave 2. This clarification would help mothers to produce more accurate counts to incorporate in their responses. The recommended statement is phrased as “*Include vegetables like those served as a stir fry, soup or stew in your response.*”



**Q10.** During the past 7 days, about how many times did your child eat a meal or snack from a fast food restaurant such as McDonald's Pizza Hut, Burger King, KFC (Kentucky Fried Chicken), Taco Bell, Wendy's and so on? Would you say?

- 1 *Child did not eat food from a fast food restaurant during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*
- DK *DON'T KNOW*
- RF *REFUSED*

**Revised Q10.** During the past 7 days, including school activities, play dates, sports, and the weekend about how many times did your child eat a meal or snack from a fast food restaurant with no wait service such as McDonald's, Pizza Hut, Burger King, KFC (Kentucky Fried Chicken), Taco Bell, Wendy's and so on? Consider both eating out, carry out and delivery of meals in your response. Would you say:

- 1 *Child did not eat food from a fast food restaurant during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*
- DK *DON'T KNOW*
- RF *REFUSED*

**Rationale:** The addition of this language appeared work well in clarifying the kinds of places mothers should consider in answering the question about fast food. In particular, focus group respondents did not seem to struggle with including any meal that their child had eaten out at any type of restaurant in their response to the revised question. This wording seemed to alleviate mothers conceptualizing fast food as any eating outside of the home.

**Q11.** During the past 7 days, how many times did your child eat candy, ice cream, cookies, cakes, brownies, or other sweets? Would you say:

- 1 *Child did not eat sweets during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*
- DK *DON'T KNOW*
- RF *REFUSED*

**Revised Q11.** During the past 7 days, including afterschool activities, sports, and the weekend, how many times did your child eat candy (including Fruit Roll Ups and similar items), ice cream, cookies, cakes, brownies, or other sweets? Would you say:

- 1 *Child did not eat sweets during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*
- DK *DON'T KNOW*
- RF *REFUSED*

**Rationale:** In addition to the prompting statement described above, adding the wording "Fruit Roll-Ups or similar snacks" helped mothers to know where to classify these food items. Reporting for the foods included in this question was a sensitive topic, one that may be subject to underestimates.

**Q13.** During the past 7 days, how many times did your child eat French fries or fried potatoes?

- 1 *Child did not eat French fries or fried potatoes during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*
- DK *DON'T KNOW*
- RF *REFUSED*

**Revised Q13.** During the past 7 days, including school activities, play dates, sports, and the weekend, how many times did your child eat French fries or fried potatoes?

- 1 *Child did not eat French fries or fried potatoes during the past 7 days.*
- 2 *1 to 3 times during the past 7 days.*
- 3 *4 to 6 times during the past 7 days.*
- 4 *1 time per day.*
- 5 *2 times per day.*
- 6 *3 times per day.*
- 7 *4 or more times per day.*
- DK *DON'T KNOW*
- RF *REFUSED*

**Rationale:** In addition to the prompting statement described above, this question should be moved to appear after the potato question, and be the new Question 8. Mothers in Wave 2 recommended that this question be paired conceptually with the question on potatoes. They suggested that such a pairing would help mothers answer the question by making it easier to recall and answer questions on potato consumption. Also moving the question to follow after the original question 7 lessens the probability that mothers who answered the fast food question will view this question as asking for the same information.